

Reaction mechanism- series of elementary steps that add up to give you an overall balanced equation, reactions can happen in 1, 2, 3, or more steps.

Criteria for a good or plausible mechanism

1. Sum of elementary steps must add up to give you the overall reaction
2. Rate (k) (which is determined experimentally) of the overall reaction matches the slope for the slow reaction (rate determining step- slowest step among all elementary steps, this step determines the rate of the overall chemical reaction)

E.g. Making butter toasted bread for the whole school example

3. Molecularity- number of colliding molecules

a. Unimolecular- 1 molecule

b. Bimolecular- 2 molecules

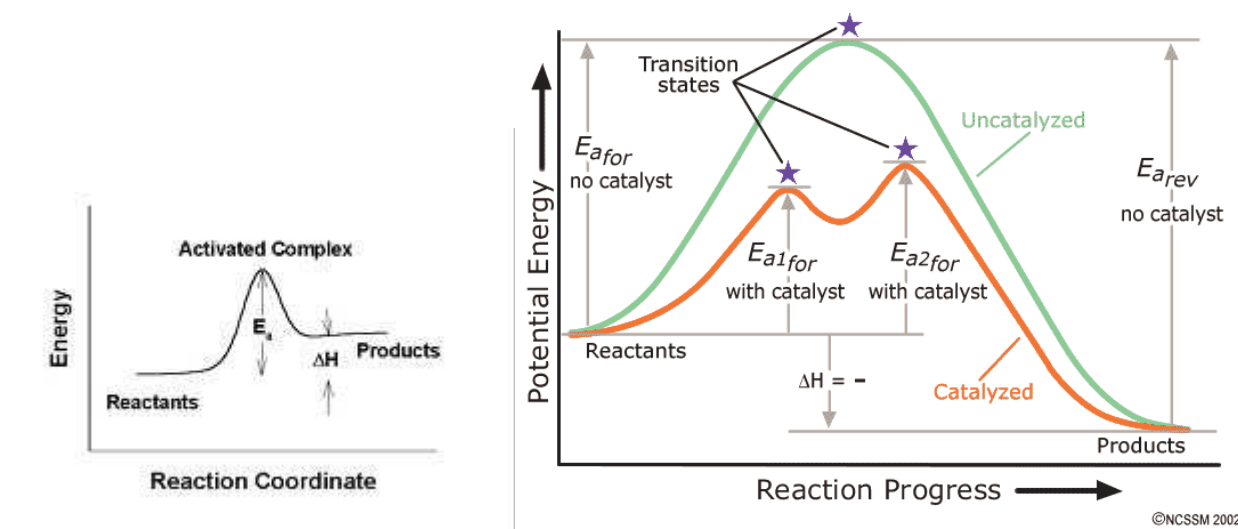
c. Trimolecular- 3 molecules

More likely to occur

Catalyst- a specie that is used to speed up the rate of a reaction and is not consumed by the reaction, therefore specie does not appear in the overall reaction (appears as a reactant and then as a product)

Intermediate- a specie that is formed during one step and is then consumed in another, therefore specie does not appear in the overall reaction (1st appears as a product then as a reactant)

Graphs (illustrating activation energy)



Examples (worksheet)